

MOBILITY ( $\text{cm}^2/\text{Vs}$ )

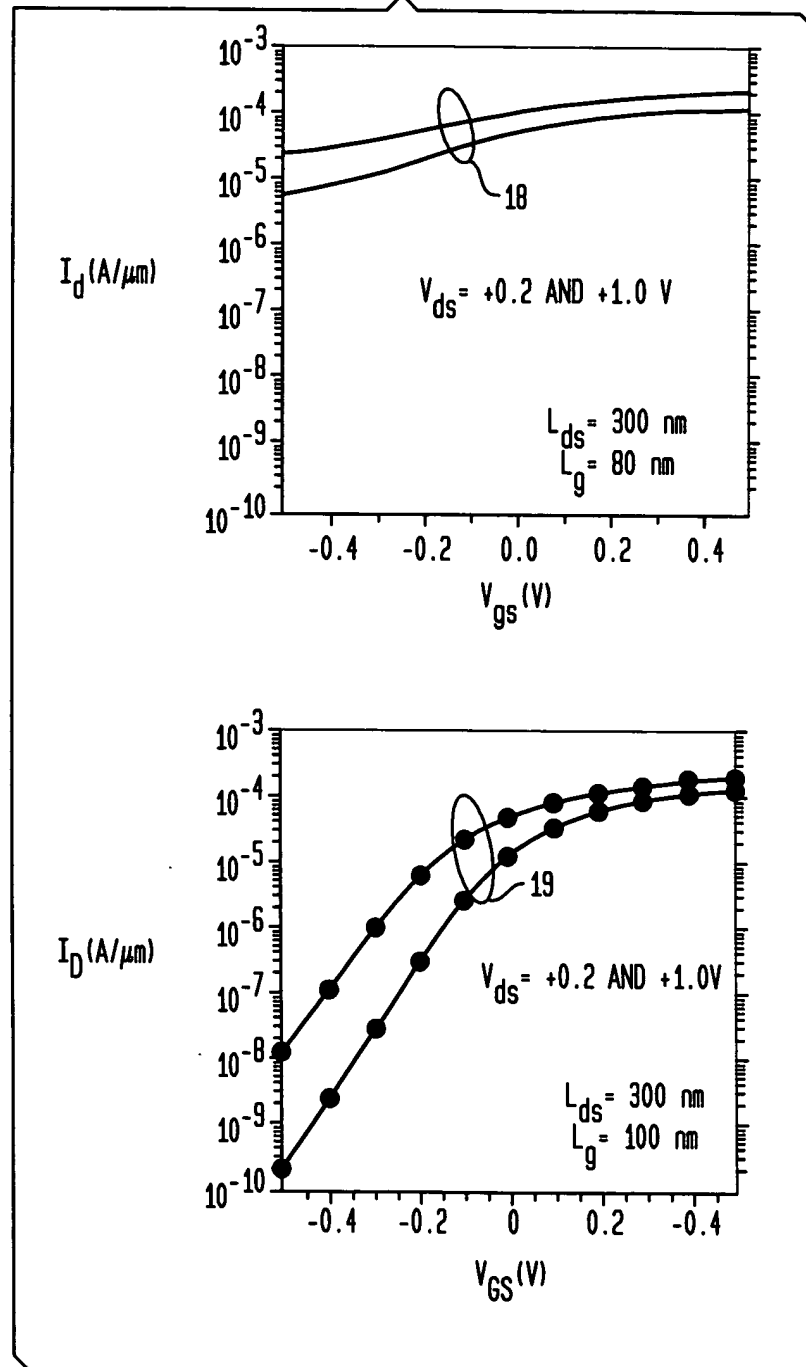
— 700°C ANNEAL ONLY  
 — B-/45keV/1.2e12 $\text{cm}^{-2}$  + 700°C ANNEAL

12

15

TEMPERATURE (K)

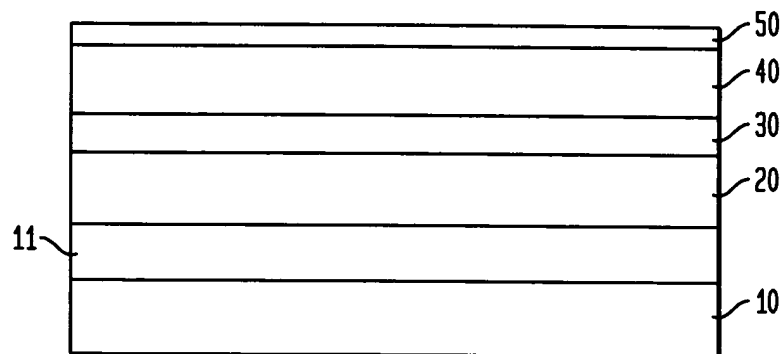
FIG. 1B



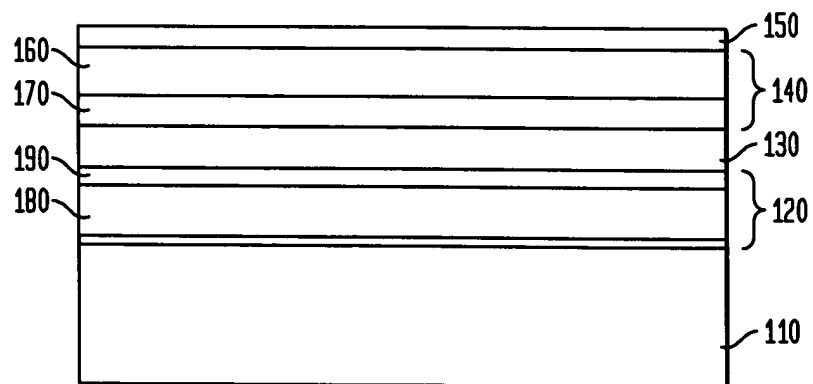


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**FIG. 2**



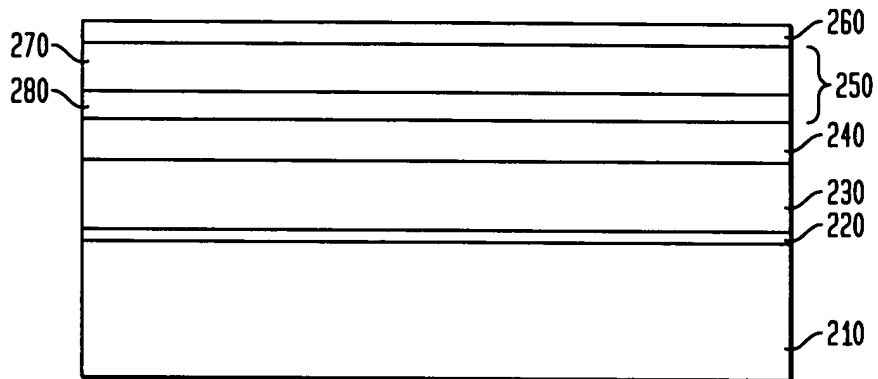
**FIG. 3**





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**FIG. 4**



**FIG. 5**

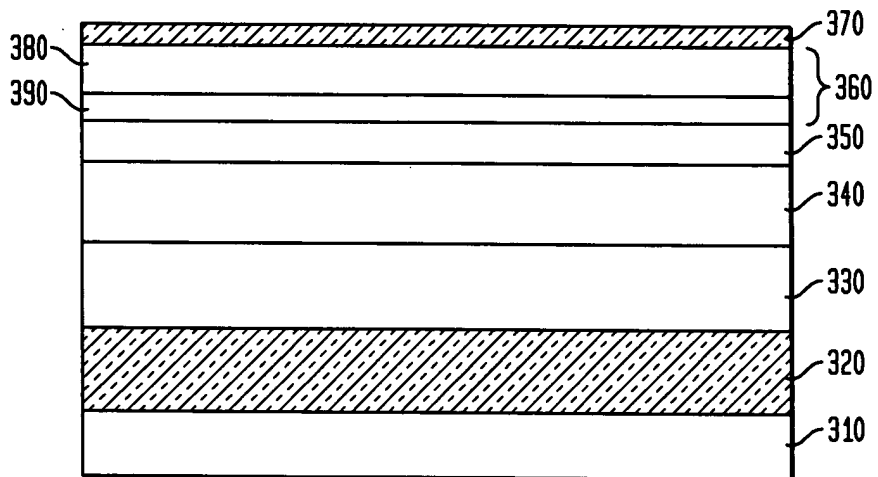


FIG. 6

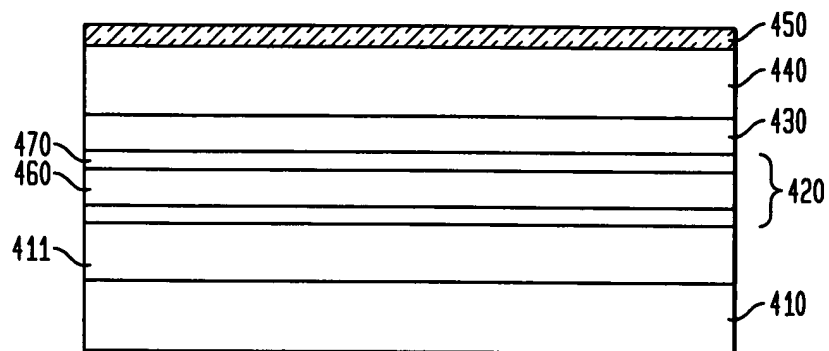
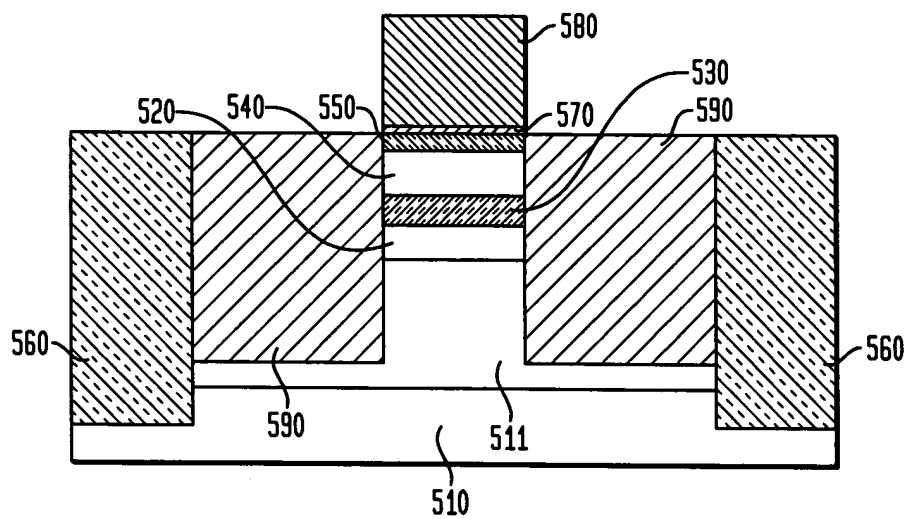


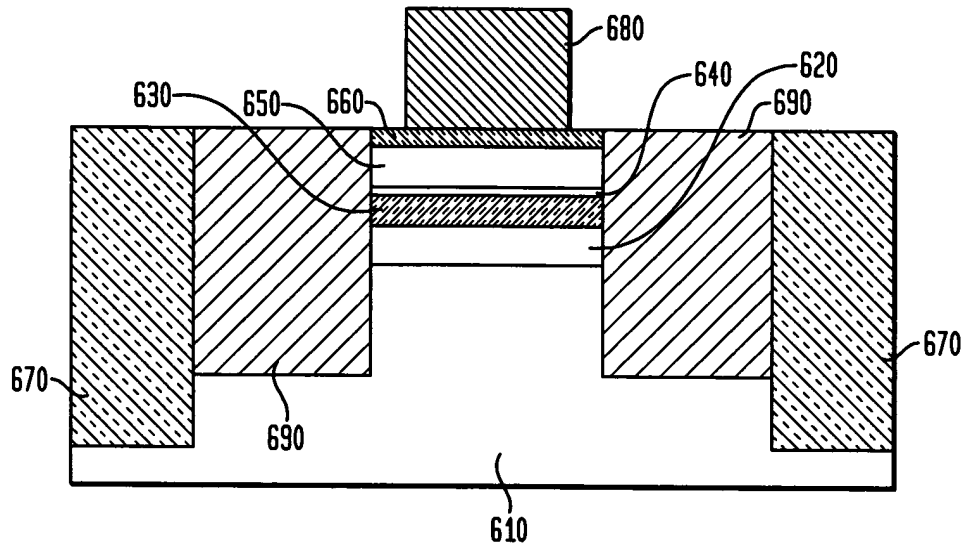
FIG. 7





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**FIG. 8**





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**FIG. 9A**

RELAXED SiGe
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**FIG. 9B**

p-type implant
RELAXED SiGe

**FIG. 9C**

INTERPOSER LAYER-UNDOPED
p-type implant
RELAXED SiGe

**FIG. 9D**

BOTTOM SiGe BUFFER-UNDOPED
INTERPOSER LAYER-UNDOPED
p-type implant
RELAXED SiGe



**FIG. 9E**

Si QUANTUM WELL-UNDOPED
BOTTOM SiGe BUFFER-UNDOPED
INTERPOSER LAYER-UNDOPED
p-type implant
RELAXED SiGe

**FIG. 9F**

TOP Si <sub>1-m</sub> Ge <sub>m</sub> BUFFER LAYER
Si QUANTUM WELL-UNDOPED
BOTTOM Si <sub>1-z</sub> Ge <sub>z</sub> BUFFER
Si <sub>1-y</sub> Ge <sub>y</sub> INTERPOSER LAYER-UNDOPED
p-type implant
RELAXED Si <sub>1-x</sub> Ge <sub>x</sub>

**FIG. 9G**

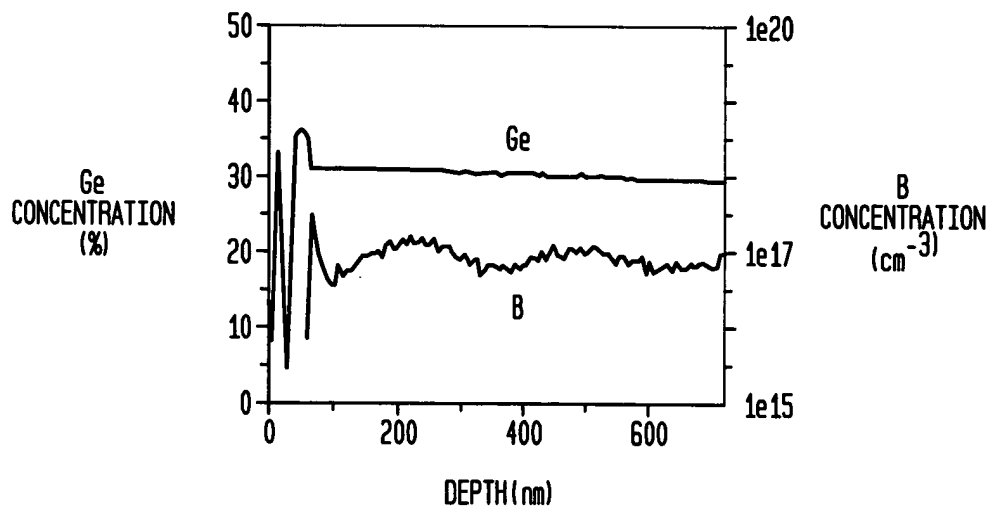
Si cap LAYER
TOP Si <sub>1-m</sub> Ge <sub>m</sub> BUFFER LAYER
Si QUANTUM WELL-UNDOPED
BOTTOM Si <sub>1-z</sub> Ge <sub>z</sub> BUFFER
Si <sub>1-y</sub> Ge <sub>y</sub> INTERPOSER LAYER-UNDOPED
p-type implant
RELAXED Si <sub>1-x</sub> Ge <sub>x</sub>





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**FIG. 10A**



**FIG. 10B**

27 nm	n-SiGe	SUPPLY LAYER
10 nm	iSiGe	SPACER LAYER
10 nm	Si	QUANTUM WELL
29 nm	i-SiGe	REGROWN BUFFER
REGROWTH INTERFACE		
p-SiGe IMPLANTED BUFFER		



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**FIG. 10C**

